

550, 91f

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
7 October 2004 (07.10.2004)

PCT

(10) International Publication Number
WO 2004/085793 A1

(51) International Patent Classification⁷: E21B 34/10,
21/10, 34/08

[GB/GB]; 27 Baker Street, Rosemount, Aberdeen AB25 1UR (GB). **MCGARIAN, Bruce** [GB/GB]; 23 East Glebe, Stonehaven, Aberdeen AB3 2HW (GB).

(21) International Application Number:
PCT/GB2004/001344

(74) Agents: BENNETT, Adrian, Robert, James et al.; AA Thornton & Co, 235 High Holborn, London WC1V 7LE (GB).

(22) International Filing Date: 29 March 2004 (29.03.2004)

(25) Filing Language: English

(81) **Designated States** (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SI, SY, TI, TM

(26) Publication Language: English

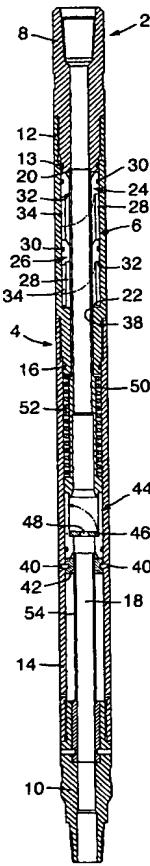
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM
ZW.

(71) **Applicant (for all designated States except US): SMITH INTERNATIONAL, INC. [US/US]; 16740 Hardy Street, Houston, TX 77205-0068 (US).**

(84) **Designated States** (unless otherwise indicated, for every kind of regional protection available): ARIGO (BW, GH)

[Continued on next page.]

(54) Title: WELLBORE ANNULUS FLUSHING VALVE



(57) Abstract: The invention relates to downhole wellbore apparatus and particularly, but not exclusively, to apparatus for use in wellbore cleaning operations. A downhole tool (2) comprises a body (4) having a bore extending longitudinally therethrough, wherein the tool (2) further comprises a one-way valve (24,26) for allowing a flow of fluid in a first direction through the tool bore and preventing a flow of fluid in a second direction through the tool bore, the second direction being opposite to the first direction. The tool further comprises means (38) for rendering the one-way valve (24,26) inoperable so as to be ineffective at preventing fluid flow; and means (44,40) for selectively making the one-way valve operable so as to be effective at allowing fluid flow in said first direction and preventing fluid flow in said second direction.

WO 2004/085793 A1



GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.